55 pts with HOCM (24 men, 62 ± 12 y). 4.5 ± 2.5 ml ethanol were injected via a balloon catheter. Serial left heart catheterisation, exercise right heart catheterisation, transoesophageal echocardiography and electrophysiologic testing were performed before as well as 2 weeks and 7 months after intervention. Clinical information is obtained with a max. of 22 months. Major results were a reduction of septal thickness (from 22 ± 3 to 10 ± 2 mm), an elimination of outflow obstruction and a decrease of left ventricular filling pressures despite a slightly reduced ejection fraction (from 0.71 ± 9 to 0.68 ± 9). Peak CK-activity rose to a mean value of 665 ± 462IU. There was no late death after hospital demission.

	resting gradient	post-ES gradient	LVEDP
before TASH (n = 55)	56 ± 43 mmHg	140 ± 53 mmHg	16 ± 5 mmHg
after 10 minutes (n = 33)	15 ± 22 mmHg	44 ± 46 mmHg	14 ± 5 mmHg
after 2 weeks (n = 31)	9 ± 17 mmHg	33 ± 38 mmHg	12 ± 3 mmHg
after 5 months (n = 9)	2 ± 4 mmHg	19 ± 32 mmHg	13 ± 3 mmHg

After 7 months NYHA-stage improved from 2.9 ± 0.4 to 1.6 ± 0.6, exercise tolerance from 62 ± 27 to 83 ± 39 watts and pulmonary artery mean pressure from 43 ± 7 to 33 ± 8 mmHg at identical workloads. Permanent high-grade av-block were observed in 12 pts and 3 pts with severe concomitant disease could not be resuscitated from different emergencies related to the potential of TASH induced av-conduction disturbances.

Conclusion: TASH leads to a pronounced clinical and hemodynamic improvement that compare favorable with the results of surgical myectomy. However, it should performed only in pts with severe symtoms refractory to drug therapy, as an alternative to surgery.

9:45

835-6 Influence of DDD Pacing on LV Parameters in Hypertrophic Obstructive Cardiomyopathy: Results of the PIC Study

J. Xavier, N. Aebischer, L. Kappenberger. *The PIC Study Group, Division of Cardiology, Department of Medicine, University Hospital, Lausanne, Switzerland*

The European multicenter prospective randomised study (PIC Study) collected 83 pts severely symptomatic from HOCM and refractory or intolerant to drugs. All were prospectively equipped with a dual-chamber pacemaker and followed for one-year. They were randomised to three months each of active (DDDon) or inactive (AAI30 = DDDoff) DDD pacing in a blinded crossover study, followed by six months of permanent DDDon pacing. Seventy eight pts completed the study. In 53 of them, complete ECHO data were available to the central core lab for screening and 1 year follow-up. The following parameters obtained by 2DE were measured by two independent observers: end-diastolic diameter (LVed), septal thickness (IVS) and posterior wall thickness (PWth). For all these patients, the evolution of maximal pressure gradient (maxPG = mmHg) was assessed by Doppler in sinus rhythm (SR) and DDD pacing (PM).

	Pre-implant	1 Year Follow-up	p
LVed (mm)	43 ± 5	44 ± 6	< 0.001
IVS	22 ± 5	22 ± 5	NS
PWth	11 ± 2	11 ± 2	NS
MaxPG SR	64 ± 27	40 ± 27	< 0.001
MaxPG PM	36 ± 20	26 ± 19	< 0.005

Conclusions: According to these results, permanent pacing in HOCM significantly and persistently reduced subaortic pressure gradient but does not influence wall thickness after a permanent pacing period of six to nine months. However, there is a slight but significant increase in left ventricular end-diastolic diameter.

836 Aspects of Atrial Fibrillation

Tuesday, March 31, 1998, 8:30 a.m.–10:00 a.m.
Georgia World Congress Center, Room 256W

8:30

836-1 Amiodarone in the Treatment of Chronic Atrial Fibrillation: Results of a Randomised, Controlled Study

N.E. Igoumenidis, G.E. Kochiadakis, M.E. Marketou, M.C. Solomou, F.M. Zambetakis, E.G. Zuridakis, P.E. Vardas. *Cardiology Dept., Heraklion University Hospital, Crete, Greece*

Background: The efficacy and safety of amiodarone in the conversion of chronic atrial fibrillation was investigated in a prospective, randomised, placebo-controlled study.

Methods: Of 67 consecutive patients (32 men, mean age 64 ± 9 years) with AF lasting 2-3 weeks, 33 received amiodarone and 34 placebo. Baseline clinical characteristics were similar in the two groups. Pts randomised to amiodarone began with intravenous 5 mg/kg body weight over 15 min, followed by 15 mg/kg body weight over 24 hours and then 400 mg/day orally, for 1 month. Pts randomized to placebo received an identical amount of saline iv over 24 hours and then oral placebo for one month.

Results: Conversion to sinus rhythm was achieved in 16 (48.48%) of the 33 pts who received amiodarone and in none of the 34 in the placebo group ($p < 0.001$). In the amiodarone group none of the pts converted to sinus rhythm within the first 24 hours. Those who converted had smaller atria than those who did not (LA diameter: 41.9 ± 7.2 vs 50.4 ± 5.7 mm, $p < 0.001$). Sex, age, ventricular rate, left ventricular injection fraction and the duration of atrial fibrillation did not differ significantly between patients who converted and those who did not. Treatment was discontinued in 1 pt (amiodarone group) because of allergic reaction. No side effects were observed in the placebo group.

Conclusions: Amiodarone, administered orally, appears to be safe and effective in the termination of chronic atrial fibrillation. Left atrial diameter is the sole independent predictor of conversion.

8:45

836-2 The Influence of Age and Gender on Rate and Duration of Paroxysmal Atrial Fibrillation

K. Hnatkova, J.E.P. Waktare, F.D. Murgatroyd, X. Guo, A.J. Camm, M. Malik. *St. George's Hospital Medical School, London, England*

The influence of age and gender on paroxysmal atrial fibrillation (PAF) is previously undocumented.

Methods: The heart rate (HR) during PAF in pts on no anti-arrhythmic or rate limiting therapy was analysed. Data were obtained from the database of 177 24-hour Holter recordings which had been analysed to mark the onset and termination of PAF, and converted into RR interval files. Only PAF episodes of at least 2 min duration containing ≤20% noise were included. HR in the first 30 sec segment, HR in the remainder of PAF, and the duration of PAF episodes were compared between age and sex different groups (Wilcoxon test).

Results: 236 episodes from 55 recordings in 32 pts (All pts: 61.4 ± 12.8 years; male (19): 58.5 ± 12.6 years; female (13): 65.5 ± 12.4 years) fulfilled the inclusion criteria. Women were slightly older than men (p = ns). The table illustrates the influence of age and gender on heart rate during AF and duration of episodes. All comparisons of HR for age and gender were significant ($p < 0.05$).

	HR in 1st 30 sec of PAF (mean ± SD) [bpm]	HR in remainder of PAF (mean ± SD) [bpm]	Duration of PAF episodes - median (mean ± SD) [min]
Male	114.9 ± 19.9	111.0 ± 20.2	8.0 (50.5 ± 171.6)
Female	122.7 ± 34.5	119.2 ± 32.6	10.8 (89.8 ± 237.7)
Age - mean	112.1 ± 22.3	108.4 ± 17.9	9.9 (83.8 ± 232.0)
Age - mean	120.1 ± 25.3	116.2 ± 25.6	7.1 (46.9 ± 137.1)

Conclusion: PAF episodes are associated with faster heart rates and last longer in women, which may reflect differing autonomic responses to AF. A slower ventricular rate during PAF in older patients probably reflects an increasing prevalence of impaired atrioventricular conduction.

9:00

836-3 Diurnal Fluctuations in the Mode of the Onset of Paroxysmal Atrial Fibrillation

K. Hnatkova, J.E.P. Waktare, F.D. Murgatroyd, B. Xie, A.J. Camm, M. Malik. *St. George's Hospital Medical School, London, England*

A central role for autonomic tone in the onset of paroxysmal atrial fibrillation (PAF) has been postulated. This was investigated by comparing the onset of episodes beginning at night vs day.

Methods: A database of 177 24-hour Holter recordings from 60 pts (35 male; mean age 61.7) sufferening from PAF were recorded as a part of CRAFT trials. All episodes ≥30 sec AF with 1 min of noise free preceding sinus rhythm were identified, and classified as day (8:00 am–10:00 pm) or night (10:00 pm–8:00 am). Mean heart rate (HR) and change in HR (HR during final 30 sec vs final minute prior AF) were calculated, as was the pattern of terminal beats before AF onset. Beats were classified as short (S), long (L), or normal (N) with N being defined as a duration between 80% and 120% of the median of the previous 10 beats. Sequences of three final beats before AF were found, and their prevalence calculated.

Results: There was a total of 296 qualifying episodes of AF from 42 recordings. The table summarises the comparisons between day and night-time episodes. HR prior AF was slower ($p < 0.0001$; Wilcoxon test) during the night, but other differences were non-significant.

Comparison between mode of AF onset at night and during day

	Number	Mean HR	Δ mean HR	'NNN'	'NSN'	'NLS'
Day	131	75.6 bpm	−0.1%	77.1%	2.3%	2.3%
Night	165	82.2 bpm	+0.3%	87.0%	6.7%	3.0%

Conclusion: Apart from underlying HR, the mode of AF initiation does not differ during sympathetic and parasympathetic predominance.

9:15

836-4 Prevalence of the Sympathetic Influence Before Atrial Fibrillation Onset in the So-Called "Vagal Paroxysmal Atrial Fibrillation Patients"

A. Capucci, G. Coccagna[1], A. Santarelli, S. Bauleo, G. Boriani. *Cardiology Dept. General Hospital Piacenza, Italy; [1]Institute of Neurology of Bologna, Institute of Cardiology Bologna, I, Italy*

To evaluate the influence of the autonomic nervous system (ANS) on paroxysmal atrial fibrillation (PAF) onset in patients (pts) with either nocturnal or "vagal pattern", we studied 45 pts with a poligraphic analysis of sleep and Holter monitoring after a complete drugs wash-out. We used a Marquette series 8000 Holter with heart rate variability (HRV) software and defined the low frequencies (LF) (0.04–0.15 Hz) and high frequencies (HF) (0.15–0.40 Hz) ratio for all the sleep stages and at the PAF onset (10 minutes before). Spectral measures were computed over 2 minutes samples. 25 pts had no atrial fibrillation episodes, 5 pts had continuos atrial fibrillation rhythm. The 15 pts with documented PAF onset were selected for power spectral analysis of the Holter recordings.

	Wake	Phase 1–2	Phase 3–4	REM
- LF/HF	2.14 ± 0.63*	0.89 ± 0.10**	1.01 ± 0.42*	1.82 ± 0.38
- LF/HF at PAF onset	1.85 ± 0.56	1.41 ± 0.20***	2.10 ± 0.36	1.54 ± 0.56
- n PAF onset	14	12	2	3

* = $p < 0.0001$ vs 1–2 and 3–4; ** = $p < 0.0001$ vs REM; * = $p < 0.006$ vs REM *** = $p < 0.0001$ vs basal.

In conclusion, pts with apparent "vagal pattern" of PAF present a regular prevalence of the sympathetic and parasympathetic components during the different sleep stages. A sympathetic influence before PAF onset is prevalent expecially during the superficial sleep phase 1–2.

9:30

836-5 Atrial Arrhythmias Early After Cardioversion Predict Recurrence of Atrial Fibrillation

T.N. Maounis[1], E. Kyrozi[1], E. Evgeniadou[1], K. Katsaros[2], E. Billianou[2], V. Vassilikos[1], A. Manolis[1], D.V. Cokkinos[1]. *1st Cardiology Department, Greece; [1]Onassis Cardiac Surgery Center, Greece; [2]Tzanio Hospital, Athens, Greece*

Background: The recurrence of atrial fibrillation (AF) after electrical cardioversion (ECV) is frequent and affected by many factors. We assessed whether the atrial ectopic activity found in a Holter recording (HR) immediately after ECV for AF is predictive of future recurrence of this arrhythmia.

Methods: A total of 53 patients (pts) (31 males, mean age 58 ± 12) with AF of varying duration and etiology, underwent a 24 hour HR immediately after successful ECV. All had undergone an echocardiographic evaluation to estimate left atrial size (LA). They were followed for one year after EC, on the same medication that they were receiving at the time of ECV (amiodarone 14, Propafenone: 16, both: 12, sotalol: 11). From the HR the total number of atrial premature complexes (APCs) of the first six hours (6HAPs) and the average number of APCs per hour of the whole recording (HAPCs) were calculated and for statistical analysis their natural logarithms (ln) were computed. The endpoint of the study was recurrence of the arrhythmia at one year.

Results: A total of 25 pts (47%) had AF recurrence at one year. Significant differences were found in the comparison of ln6HAPCs and lnHAPCs between the two groups, while left atrial size (LA) or medication were not significantly different.

AF rec.	LA	HAPCs	6 APCs	ln6APCs	lnHAPCs
Yes	4.86 ± 0.7	55 ± 113	393 ± 854	5.0 ± 1.3	3.0 ± 1.3
No	5.06 ± 0.9	6 ± 5	42 ± 40	3.3 ± 1.2*	1.4 ± 1.1*

*$p < 0.0001$

The recording of 10 APCs per hour in the HR after ECV had a sensitivity of 70%, a specificity of 77%, a positive predictive value of 70% and negative predictive value of 77% for recurrence of AF in the first year after ECV.

Conclusion: The number of APCs in a HR after ECV for AF can identify pts at high risk for recurrence of AF who might need optimization or change of treatment, even before discharge, and more careful follow-up.

9:45

836-6 Identification of Hypertensive Patients With Atrial Fibrillation: Left Atrial Size, Signal Averaged P-Wave, or Both?

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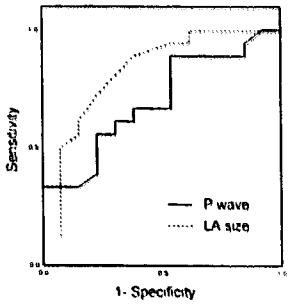
Background: Hypertension is the most common cause of atrial fibrillation (AF) in clinical practice. The duration of the P wave in the signal-averaged electrocardiogram (pSAECG) has been used to identify pts at risk for AF, but its value in hypertensive heart disease has not been specifically assessed.

Methods: We compared the diagnostic performance (ROC curves) of the left atrial (LA) size and the pSAECG in 31 pts with hypertensive heart disease (18 with a history of AF). The pSAECG was recorded in orthogonal XYZ leads with Marquette Electronics, Inc. software.

Results: Both tests identified pts with AF, but the overall performance of LA size was superior (area under the ROC curve 0.81 vs. 0.70; 2-tailed $p = 0.20$). The best cutoff of LA ≥44 mm had sensitivity of 61% and specificity of 85%. The best cutoff of filtered P wave ≥150 ms had sensitivity of 61% and specificity of 70%. The combination of both signs had a sensitivity of 27% and a specificity of 92% (only 1 of the 13 pts without AF had both signs).



Conclusions: pSAECG does not appear to be particularly efficient in identifying hypertensives with AF. Its main clinical value may reside in its use in combination with other clinical markers, like LA size.

837 New Findings Into the Use of GpIIb/IIIa Receptor Antagonists: Highlighted Abstract Session With Discussion of Current Perspectives

Tuesday, March 31, 1998, 8:30 a.m.–10:00 a.m.
Georgia World Congress Center, Lecture Hall 2

8:45

837-2 Disagreement Between Site Investigators and Clinical Event Committees is Common and Can Affect Trial Results

K.W. Mahaffey, B.E. Tardiff, C.B. Granger, K.L. Lee, R.A. Harrington, E.J. Topol, R.M. Califf. *Duke Clinical Research Institute, Durham, NC, USA*

Background: A centralized Clinical Events Committee (CEC) review process was used to adjudicate suspected clinical endpoint events in four large, randomized multicenter clinical trials.

Methods: We compared the primary endpoint event rates determined by data on the Case Report Form (CRF) with the event rates reported by the CEC (see table).

Results: The event rates reported by the CEC were typically higher than those reported by investigators on the CRF. The effect on the statistical

	CRF			CEC		
	Control	Study	P	Control	Study	P
EPIC	12.4%	9.0%	0.120	12.8%	8.3%	0.009
IMPACT-II	7.8%	5.5%	0.018	11.4%	9.2%	0.063
GUSTO-IIb	9.6%	8.4%	0.016	9.8%	8.9%	0.058
PURSUIT	10.0%	8.0%	0.0007	15.7%	14.2%	0.042

TUESDAY ORAL